

***IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES***

In re Application of: Bruce B. Randolph, Marvin M. Johnson and Glenn W. Dodwell

Serial No.: 10/663,416

Group Art Unit: 1755

Filed: September 16, 2003

Examiner: Jennine M. Brown

For: ISOPARAFFIN-OLEFIN ALKYLATION

***APPELLANTS' BRIEF ON APPEAL***

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Appeal, which was mailed on March 6, 2006, and the Notification of Non-Compliant Appeal Brief mailed on January 31, 2007, the Appellant respectfully submits this Appeal Brief. Appellants respectfully request that the claims in question be allowed.

***Real Party of Interest***

ConocoPhillips Company, formerly known as Phillips Petroleum Company, is the assignee of record of the above-captioned Application and, thus, is the real party of interest in this Appeal.

***Related Appeals and Interferences***

It is believed that there are no appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board Decision on this Appeal.

***Status of Claims***

Appellants appeal the Final Rejection of pending claims 1-9.

***Status of Amendments***

The Final Office Action was mailed on September 7, 2005, wherein the Examiner finally rejected the above claims. A Response after Final was mailed on November 15, 2005. The Examiner maintained the final rejection of the claims in an Advisory Action mailed December 29, 2005. A Notice of Appeal was mailed on March 6, 2006, along with a request for consideration in the pre-appeal brief conference pilot program. A Notice of Final Decision stating to proceed with the Appeal was mailed on April 20, 2006.

***Summary of the Claimed Subject Matter***

Claim 1 of the present invention relates to a composition suitable for use as an alkylation catalyst comprising, consisting of, or consisting essentially of an acid component and a polymer (*see* page 3, lines 17-20). The acid component is selected from the group consisting of 1) a sulfuric acid, 2) a fluorosulfonic acid, 3) a perhaloalkylsulfonic acid, 4) an ionic liquid, 5)

mixtures of Bronsted acids and Lewis Acids, and 6) combinations thereof (*see* page 4, lines 1-6).

***Grounds of Rejection to be Reviewed on Appeal***

The grounds of rejection to be reviewed on appeal are:

Whether claims 2-3 are unpatentable under 35 U.S.C. 112, 2<sup>nd</sup> paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Whether claims 1-7 are unpatentable under 35 U.S.C. 102(b) as being anticipated by Aumuller et al. (U.S. 5,714,611);

Whether claims 1-9 are unpatentable under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Aumuller (U.S. 5,914,360); and

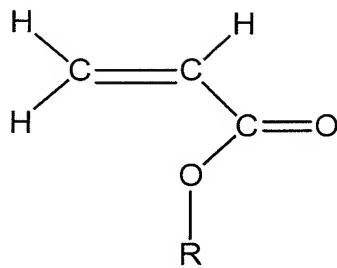
Whether claims 1 and 5 are unpatentable under 35 U.S.C. 102(b) as being anticipated by Hlatky (W.O. 01/81436 A1).

***Arguments***

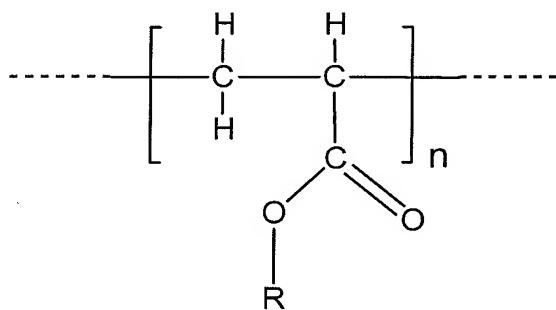
***The § 112 Rejection of Claims 2-3***

The Examiner states “. . . R is the terminal group before chain propagation and if it is a polyacrylate it cannot be hydrogen because it would be a monomeric acid and not a polymeric ester group according to the formula given in claim 1 (*see* Final Office Action, page 2).”

Applicants respectfully disagree. The monomer is as follows:



The double bond polymerizes and several of these monomers bond together to form a polymer:



Therefore, "R" can still be hydrogen when the monomer is part of the polymeric chain; "R" does not take part in the polymerization process.

The "n" in the structure and in the instant claims denotes the number of building blocks/monomers in the resulting polymer. Applicants believe the formula given in the claims satisfies the 35 U.S.C. 112 requirements.

### **The § 102(b) Rejection of Claims 1-7.**

Aumuller (U.S. 5,714,611) discloses a process to prepare N,N'-bridged compounds (see col. 1, lines 7-9). These compounds can be prepared by reacting tetramethylpiperidine compounds with a cyclic carbonate (see col. 2, lines 50-60). This reaction can be carried out with a catalyst. The catalyst can be a sulfonic acid catalyst (see col. 6 lines 1-13). A polymer is not one of the catalyst components listed.

Aumuller '611 states "The novel compounds Ia as well as the compounds I and Ib are very suitable for stabilizing organic material to the effect of light, oxygen, and heat" (*see* Aumuller '611, col. 7, lines 48-50).

A catalyst, which can be a sulfuric acid catalyst, can be used to produce the compound I, which is the N,N'-bridged bistetramethylpiperidinyl compound with the formula as shown in col. 1, lines 10-16 of Aumuller.

Aumuller '611 further states that compound Ia is the compound which can stabilize polymers (*see* generally, Aumuller '611, col. 8, lines 56-67 to col. 9, lines 1-17). Compound Ia is a variation of compound I, and its formula is shown at col. 7 lines 1-8 of Aumuller '611. As is taught in general chemistry, a catalyst increases the rate of a reaction, but is not actually consumed in the reaction. Therefore, the sulfonic acid catalyst is not a part of the final reaction product Ia and is not present when Ia is used to stabilize polymers.

Aumuller '611 does not disclose Applicants' invention, a composition containing an acid component and a polymer and Applicants argue that the Aumuller '611 reference has been misinterpreted to read otherwise.

### **The 102/103 Rejections of Claims 1-9**

The Aumuller '360 reference (U.S. 5,914,360) discloses a process to prepare N,N'-bridged bistetramethylpiperidinyl compounds (*see* Aumuller '360, col. 1, lines 8-10). This process can be carried out with a catalyst. The catalysts listed include sulfonic acid catalysts (*see* Aumuller '360, col. 6, lines 19-30). However, the catalyst does not contain a polymer, as required in the instant claims. Aumuller '360 does not disclose and Applicants have not found a catalyst containing a polymer.

The Examiner states "Aumuller, et al. disclose an acid catalyst composition . . . , heavy metal catalysts . . . and organic catalysts . . . used in an amount from 0.01 to 25 mole percent and are used to stabilize alkyl acrylate copolymers, alkyl methacrylate copolymers and other polymers (col. 6, l. 1 – col. 7, l. 54; col. 8, l. 56 – col. 9, l. 17)." (see Office action, page 5, 3<sup>rd</sup> paragraph).

However, the compound Ia in the reference that the Examiner is referring to, (the structure of which is found in col. 7, lines 15-25) is a compound which can stabilize copolymers (see col. 9 lines 7-16). Compound Ia is one of the products made by the Aumuller '360 process. It would not be obvious to use the information in Aumuller '360 to deduce a catalyst containing both an acid and a polymer by using the information provided in Aumuller '360.

### **The 102 Rejection of Claims 1 and 5**

Hlatky (W.O. 01/81436 A1) discloses "polymerizing one or more olefins in the presence of a single-site catalyst, an optional activator, and an ionic liquid." (see Hlatky, page 3, 3<sup>rd</sup> paragraph). The single site catalyst is an organometallic complex with a Group 3 to 10 metal or a lanthanide or actinide metal (see Hlatky, page 4 ,3<sup>rd</sup> paragraph). The complex can also include polymerization-stable anionic ligands (see Hlatky, page 4, 4<sup>th</sup> paragraph).

Hlatky does not disclose, and Applicants have not found, a composition comprising an acid component and a polymer.

Hlatky discloses a polymerization process performed in the presence of an ionic liquid (see page 6, line 3). This polymerization process is in the presence of a catalyst. The catalyst is an organometallic complex (see page 4, line 5). In

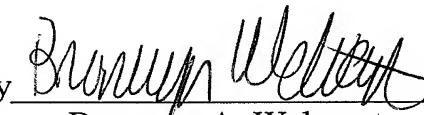
Example 2 of Hlatky "polyethylene, the expected reaction product, collects on the surface of the ionic liquid and is easily isolated." (see page 10, lines 24-25).

Applicants, therefore, argue that the two components are separate entities, and not a single composition is claimed in the instant claims.

Based on the foregoing remarks, it is respectfully suggested that claims 1-9 are patentable over the prior art. Reversal of the Final Rejection of claims 1-9 is respectfully requested.

Respectfully submitted,

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